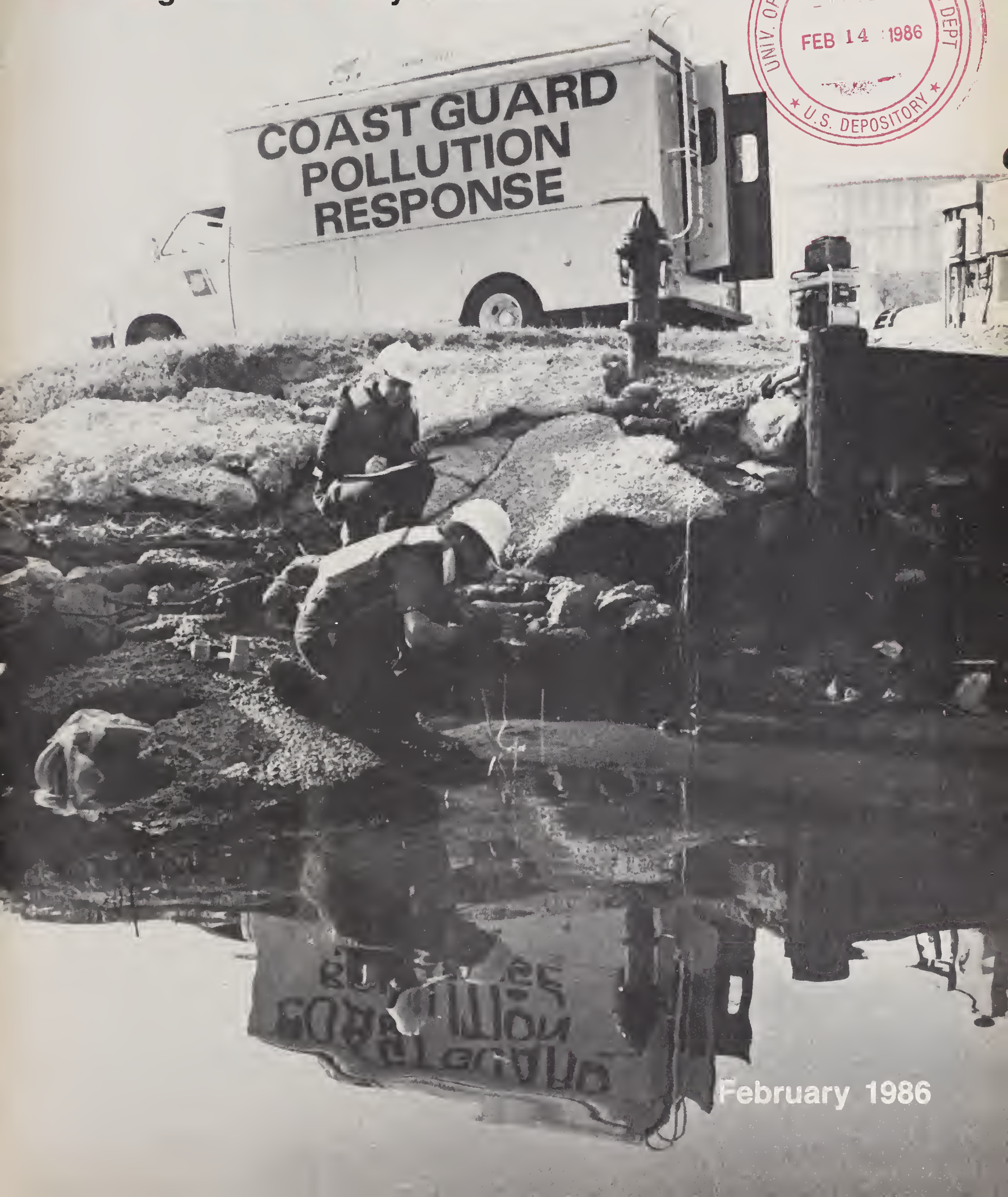
D1.41.2/4

Profile

a guide to military careers

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT
FEB 14 1986
★ U.S. DEPOSITORY ★



February 1986

Next month's issue features a story on the Army's Transportation Corps — the soldiers who move the Army by air, land and sea. Other stories include Navy optical men, Air Force flight attendants, Marine Corps warehouse men and Coast Guard electrician's mates.

FLARE

Profile

a guide to military careers Vol. 29 No. 4 February 1986

4 Marine Science Technicians
7 Newsbriefs
8 Diplomacy, tact & patience
10 Tidbits & technology
11 Teaching the fleet
12 Operation Facelift
14 'Under the Hat'
16 Military photographers
18 Second sight defense
20 New York New York!
22 Maintaining the communications flow

UNIV. OF FLA. LIB ★ DOCUMENTS DEPT
FEB 14 1986
★ U.S. DEPOSITORY ★

About the covers

Front: Petty Officer 3rd Class Calvin Miller (left) and Petty Officer 2nd Class Timothy Whitlock prepare to take water samples at a suspected pollution site. The duo operate from a Coast Guard Pollution Response Van stationed at the Norfolk, Va., Marine Safety Office. (Photo by Karen Murdock)

Back: Staff Sgt. Roger Ball, a corrosion control specialist, treats an aircraft section with corrosion retarding chemicals. (Photo by Linda Mitchell)

Director
Capt. Clark M. Gammell, USN

Deputy Director
Capt. Stephen Kerrick, USA

Managing Editor
Staff Sgt. Dave Marriott, USMC

Editors
Staff Sgt. Karen Murdock, USA
Staff Sgt. Linda Mitchell, USAF
Petty Officer 2nd Class Rick Johnson, USN

Circulation
Tech. Sgt. Gerry Johnson, USAF

PROFILE (USPS 457-490) is published monthly November through April by the High School News Service.

This magazine is designed to inform young people and guidance personnel about benefits, opportunities, privileges and programs of military service.

The Secretary of the Navy has determined that the publication of the periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication was approved by the Office of Management and Budget, December 2, 1980.

Reproduction of articles and supporting photographs is authorized provided proper credit is given.

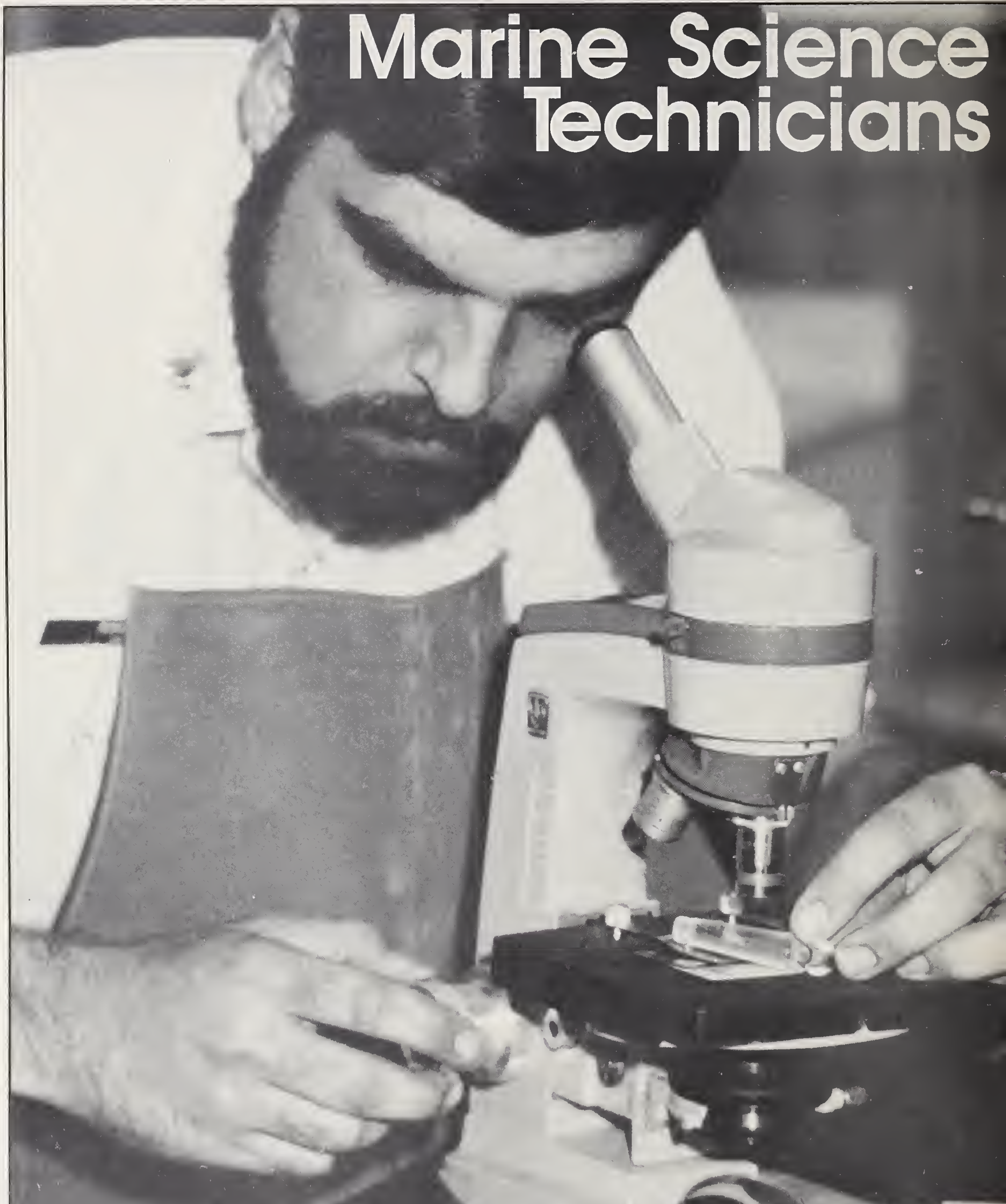
Inquiries may be directed in writing to

DOD High School News Service
PROFILE
Bldg. X-18
Norfolk, VA 23511-6698
Phone:
Commercial (804) 444-2828
AUTOVON 564-2828

Third class circulation paid at Norfolk, Va. and at an additional mailing office at Mechanicsburg, Pa.

Marine Science Technicians

The Coast Guard's pollution response team



story by Karen Murdock

"It happens quite often in the New York harbor because of the high volume of vessel traffic," Petty Officer 1st Class Lia deBettencourt, a marine science technician (MST) at the Governors Island Captain of the Port Facility in New York harbor. "A ship or barge entering the harbor has a hole in its hull and leaks oil or other hazardous materials into the water. Someone spots the spill and notifies the Captain of the Port. The port facility calls my office and we dispatch a pollution response team to the site.

"If the team locates an obvious source of the spill, they direct them to begin clean up efforts. If they can't determine the source, the team spreads absorbents or surrounds the spill with floatation devices until the Coast Guard hires a civilian contractor to perform the clean up.

"Once the contractor arrives, MSTs gather samples of the pollution and forward them to the Coast Guard's New York Field Oil Identification Laboratory (FOIL)," she continued. "MSTs at the FOIL chemically treat the pollution, then expose it to a xenon light source (similar to ultraviolet), which separates the pollution's electrons. A spectroscope plots the separated electrons' movements on a paper graph. The graph is like a fingerprint of the pollution. MSTs compare the graph with other graphs of samples obtained from ships and facilities in and around the harbor. If they find a match, they find the spill's source," she added.

Under the provisions of the Federal Water Pollution Act of 1972 (also referred to as the Clean Water Act), violators are liable for all clean up costs and subject to a fine up to $5,000. If a polluter fails to clean up the spill, the Coast Guard assumes responsibility, then recovers its costs in court.

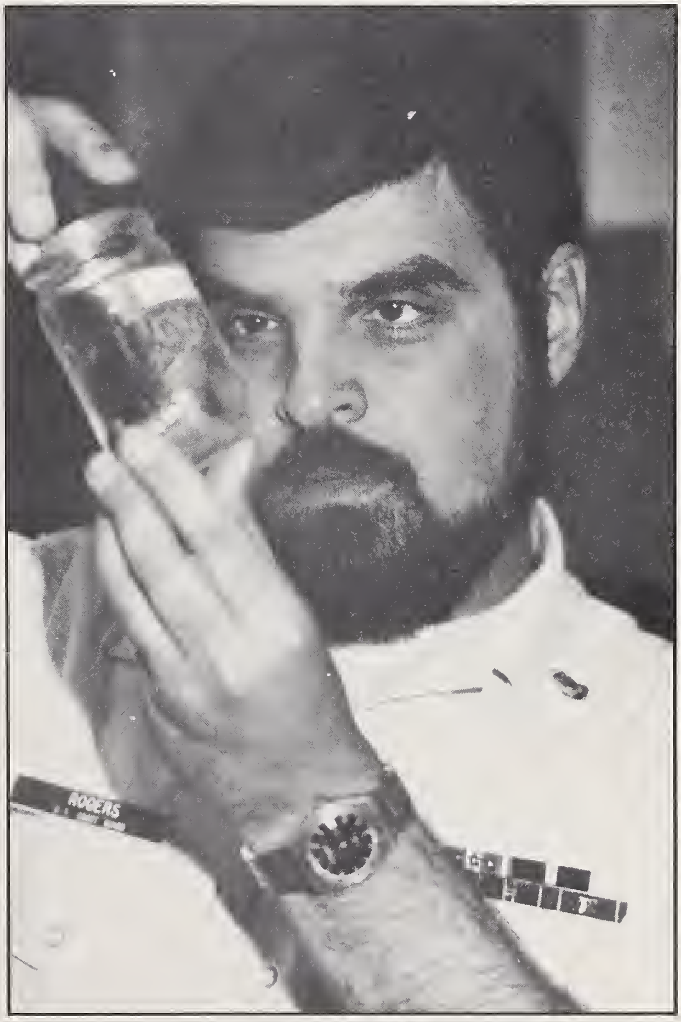
"Once a match is made, the Coast Guard informs the polluter of their responsibility to clean up the spill," deBettencourt explained. "If the source refuses to accept the findings, the Coast Guard pays for the clean up while the Coast Guard Central Oil Identification (COIL) in Groton, Conn., retests the sample. After verifying the FOIL's findings, the COIL prepares legal documentation naming the violator as the source of the spill. The Coast Guard can, and often does, take polluters to court to recover the expenses of a clean up," she said.

Working as a member of a pollution response team is one of many jobs a marine science technician performs. "The MST rating has recently been revised," deBettencourt said. "The job originally entailed only oceanographic duties like working with marine animals, testing sea water, and predicting tides. However, because of federal cut backs in spending, most of the oceanographic duties have been eliminated. The rate now involves weather briefings, marine safety and the effects of pollution on the environment. MSTs on icebreakers perform the only remaining oceanographic duties. They track the paths of icebergs through international shipping lanes.

"With the expansion of the rating, marine science technicians' primary mission is law enforcement," she continued. "As federal law enforcement officers, MSTs perform general inspections in and around the country's ports to ensure all facilities and vessels comply with federal regulations concerning storage and handling of cargo. They also perform investigations of any violations. If a facility is cited for a storage violation, and the problem hasn't been rectified when reinspected, the Coast Guard files civil action.

"MSTs also board foreign and domestic vessels entering harbors to ensure the ships have up-to-date navigational charts," she added. "If the charts are obsolete, there's a good chance the ship will have an accident or collision while navigating the harbor."

According to Lt. Daniel Whiting, chief of the



Chief Petty Officer Rogers examines an oil sample collected from a pollution site. (U.S. Coast Guard photo)

"The Coast Guard can, and often does, take polluters to court to recover the expenses of a cleanup"

Marine Science Technician School at the Coast Guard Reserve Training Center, Yorktown, Va., the 10-week MST course covers a variety of job skill topics. "The school begins with a basic review of high school level math and science. MSTs need a solid background in both of these areas to conduct the tests at FOILs and to learn data processing."

In addition to data processing, the course includes classes on meteorology, weather observation, oceanography, basic chemistry and physics, environmental protection and marine safety.

"The instructors teach the students the basic skills required to perform in the rating," Whiting said. "They receive additional on-the-job training when they report to their first assignment. If an MST reports to an icebreaker, they learn how to plot and track icebergs. If they transfer to a captain of the port, they learn the duties of a pollution response team or how to conduct fluorescent spectroscopies at a FOIL. Throughout an MSTs career, they receive on-the-job training to meet the specific needs of the area in which they're assigned.

Petty Officer Calvin Miller collects water samples for testing. (Photo by Karen Murdock)

"Before a student reports to school, they must work in the rating for six months," he added. "The Coast Guard has found this prevents the individual from entering a field for which they have no aptitude. It also enhances most students' understanding of the material presented at the MST school."

"I like the responsibility my job entails," deBettencourt said. "Marine science technicians deal with the public on a daily basis. As official Coast Guard representatives, MSTs have to be sharp, they have to know what they're doing.

"It's also a rewarding job," she continued. "I feel a sense of accomplishment when I determine who has polluted the harbor and initiate procedures to get the pollution cleaned up.

"In fact, that's what I like most about my job. My work affects the entire population. After all, both present and future generations will benefit from a pollution-free environment."

A Coast Guard marine science technician tests a water sample for pollutants in a field laboratory. (U.S. Coast Guard photo)

newsbriefs

Army push-up rules change

The U.S. Army has issued a set of revised instructions to standardize the physical training test push-up.

The biggest change is that soldiers may no longer lift their arms or legs and "shake it out" during the test.

An altered front leaning rest position is the only authorized rest position. Flexing and sagging the back is OK as long as soldiers return to a proper front leaning rest position before continuing. Resting on the ground or raising the hands or feet from the ground will result in the test being terminated.

As before, the body must remain in a generally straight line and move as a unit during each repetition. The body must be lowered until the upper arm is parallel to the ground for the push-up to count.

If a soldier fails to do the first few push-ups correctly, he will be stopped, have his mistakes pointed out and be sent to the end of the line to be retested. No restarts are allowed after the first 10 push-ups.

Aircraft of the future

A version of the Boeing 707 jet being developed as a replacement of the aging EC-130 Hercules aircraft is scheduled to be evaluated in late 1988 at the Naval Air Test Center, Patuxent River, Md.

The replacement airframe, designated the E-6A, will be equipped with jet engines more powerful than those now used. It has a longer range than the EC-130 and the capability to remain airborne for more than 15 hours at a time.

The E-6A's basic mission will be to maintain communications between subsurface ships and ground stations.

Marine Corps motorcycles

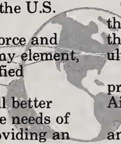
The Marine Corps recently awarded a contract to Hayes Manufacturing Company, Rancho Cucamonga, Calif. for Kawasaki motorcycles.

The 250cc cycles, capable of cross-country mobility, will provide essential service to combat support, combat service support and command elements by providing alternate means of transporting messages, documents and light cargo.

The Kawasakis secondary roles include transportation for forward observers, military police and reconnaissance personnel.

The bikes are scheduled for delivery to the Marine Corps during 1986.

Unified Space Command launched



U.S. Air Force Gen. Robert T. Herres recently became the first commander in chief of the U.S. Space Command.

The command, composed of the Air Force and Naval Space Commands and a new Army element, is designed to support unified and specified commanders.

Herres said the unified command "will better serve national security interests, and the needs of the U.S. and its allies worldwide, by providing an organizational structure that will centralize responsibilities for more effective use of space systems."

The Chairman of the Joint Chiefs of Staff (at the time), Gen. John W. Vessey Jr., was a guest at the activation ceremony. He told the audience the ultimate goal of the new command is peace.

Officials say that the U.S. Space Command provides for full participation by the Army, Navy, Air Force and Marine Corps.

"We face many challenges in the realm of space and I look forward to working with members of all the services in meeting those challenges," Herres said.

Diplomacy, Tact & Patience

story and photos
by Linda L. Mitchell

"Anyone desiring air transportation to Providence, R.I.; Pease Air Force Base, N.H.; or Loring Air Force Base, Maine, please check with the terminal information desk immediately."

Staff Sgt. Frank Goethe has repeated this or similar messages several thousand times in his career, but he never tires of it.

"People who enjoy helping others will love this job," said Goethe, an air passenger specialist in the 89th Military Airlift Wing (MAW) air terminal, Andrews Air Force Base, Md. "Air passenger specialists assist hundreds of travelers weekly with ticket and flight arrangements.

"I get satisfaction from helping my military peers save money," he added. Military Airlift Command (MAC) flights cost almost nothing, compared to the hundreds of dollars charged by commercial airlines. It's a benefit service members frequently take advantage of.

"Service members, their families and government civilians traveling on official overseas orders receive first priority space-required seating," Goethe said. "Any remaining seats, referred to as space-available (Space-A), are open to military members and retirees on vacation. Family members of active duty and retired personnel on leave status are authorized Space-A seating on overseas flights, if available," Goethe explained.

The processing procedure resembles that of commercial airlines. "Prospective passengers first get flight data from information or space-available desk clerks, and then register for flights. The clerks tell people when to meet their flight.

"At the designated time," Goethe said, "travelers go through the magnetometer (metal detector), and on to the processing desk. Air passenger specialists weigh and tag baggage to destinations, process tickets and order required meals at the desk.

"The service members' only out-of-pocket expense is $10 for MAC overseas flights. MAC flights within the continental United States, excluding Hawaii and Alaska, are available only to service members and cost nothing," the air passenger specialist added.

After their boarding call,

passengers are transported to the airplane and met by an in-flight crew member.

Besides working in small military air terminals, air passenger specialists are employed in major commercial airports. "They perform basically the same job as in the on-base terminals, assisting military travelers with information, reservations and processing for category Y and category B commercial flights," Goethe said.

"For category Y flights, the government buys 20 seats minimum on a commercial airliner. Category B means the government has purchased every seat. Once space-required priorities are met, this offers another inexpensive way for active duty, retired personnel and their families to vacation. These flights cost $13," he explained.

Since military travel includes foreign countries, air passenger specialists ensure no international border violations are inadvertently committed. "They check all passports and visas, and work closely with immigration and customs officials to be certain passengers have the necessary entry documents," he said.

Goethe and his co-workers also aid travelers with finding alternative transportation and raising emergency funds to cover expenses. "Often, people traveling on stand-by can't board the flight they want because it's booked. This can cause hardship for those who may have to stay in a hotel while awaiting a later flight or finding other, more expensive transportation.

"Air passenger specialists refer them to the correct on-base agencies, like the Red Cross for funds, or the Scheduled Airline Ticket Office for commercial tickets at military discount. Plus, they send them to off-base rail and bus stations.

"Because of these challenges, the job requires diplomacy, tact, and patience," Goethe said. "Frustrated or hysterical passengers are difficult to deal with. Air passenger specialists constantly use transactional analysis training to communicate with people on a calm, adult level."

Aside from transactional analysis, students in the five-week technical school at Sheppard Air Force Base, Texas, study manuals and regulations. They also learn to prepare and process documents including military travel authorizations and government transportation requests (travelers' tickets on MAC, category Y and B flights).

Knowing how to communicate effectively with passengers is important, particularly at Andrews because of the special people who pass through their gates. "Of course, all of our passengers are special, but people processing through here have included foreign embassy officials, senators and congressmen. For that reason, Andrews is a four-year special duty assignment for experienced air passenger specialists.

"The job gets pretty exciting," Goethe said. "Almost daily, news making events happen right here. The president flies in or out, a head of state arrives for a visit, and members of Congress are always on the move. Because I work here, I almost feel like I'm part of the event," he said.

And, if making the same flight information announcement for the one thousand and first time, or helping the one millionth passenger make flight arrangements is part of the event, Goethe and his fellow air passenger specialists are only too happy to be of service.

tidbits & technology

Simulated Ship Training

Cadets at the Coast Guard Academy will be training with a Ship Control and Navigation Training System (SCANTS) by early 1986. The move will put the Academy in the forefront of state-of-the-art ship simulator training.

SCANTS will be an integrated tool for the development of both individual and team-oriented shipboard operational skills. The existing training program will be expanded with the addition of a ship bridge and Combat Information Center simulator, and a radar trainer employing two target and land mass generator packages.

Air Force goes radial

Following extensive testing, officials have concluded that the radial tire is the U.S. Air Force's tire of the future.

Pilots and maintenance personnel compared the radial design with two bias-ply tires on the A-10 Thunderbolt II. The radial tires, as expected, proved more than adequate in response and handling.

Radial tires have now been approved for use on the F-15E aircraft. Many more systems will use the improved design in the near future, according to tire experts at Hill Air Force Base, Utah.

Laboratory tests indicate radial tires improve tread wear 50 to 60 percent; traction by 2 to 5 percent and tire life by 45 to 50 percent. These improvements reduce maintenance costs, lower condemnation rates and improve performance.

Women Marines drill with M16-A2 Rifles

The M-16A2 rifle has made its way into the Woman Recruit Training Command at Marine Corps Recruit Depot Parris Island, S.C.

Women Marine recruits were tested in close order drill with rifles for the first time on July 29, 1985, while women drill instructors debuted with swords. The new trend in drilling stems from a recent change in the training order for Women Marines which implements the Commandant of the Marine Corps' philosophy that, "They (women) must be trained in defensive techniques and operations in the event of unforeseen hostile activity."

Sgt. Delma Alvarado, who drilled recruits in competition after three weeks training, said that although some rifle movements are difficult for women, the addition of the M-16A2 has made teaching easier. "The rifle makes drill more of a challenge for them. Their minds are more alert because they want to learn how to do it right."

The transition to the M-16A2 continues throughout the Corps, with more than 100,000 rifles already in the hands of Fleet Marine Force Marines. The transition is scheduled to be completed during fiscal year 1989.

Air Force jumpers

Fighter aircraft that "jump" into the air without using an inclined ramp during takeoff from short runways are the subject of a $1.3 million U.S. Air Force study by Lockheed-California Co.

The company is developing a system that would release a charge of high pressure gas into the landing gear struts, causing an aircraft to jump upward. Having been literally thrown into the air, the aircraft could rotate to the proper angle in approximately half the normal takeoff distance.

No more lost patrols

Airborne soldiers will no longer have to play "hide and seek" after jumping into a dark or fog-covered drop zone. Paratroopers will be able to locate assembly points and equipment faster thanks to a new device called the Drop Zone Assembly Aid Kit.

The system, which consists of a transmitter and a one-pound receiver worn on the wrist, can either be carried by small-unit leaders or packed on top of equipment loads dropped in.

"All a solider has to do is turn the receiver on and turn around until he gets a signal, then walk in that direction," said Dr. Bill Novick, one of the device's inventors.

Teaching the Fleet

story by James McKane III
photo by Rick Johnson

The bumper sticker "If you can read this, thank a teacher" says it all. Since our earliest recollections we've depended on teachers. We depended on parents to teach us how to walk and talk. We depended on elementary school teachers to teach us how to read and write. And we depended on high school teachers to teach us the knowledge needed to become productive citizens.

But our dependence on teachers doesn't end with high school or college graduation. Regardless of which profession we enter, chances are the company which employs us will have a training program. A training program taught by professional instructors.

The U.S. Navy is no different. It has professional instructors teaching at all its service schools. Instructors who teach hundreds of trades like welding, ordnance repair, and computer programming, to name a few.

Navy service school instructors are petty officers who are considered to be among the most knowledgeable in their field. "To be considered for instructor duty," said Senior Chief Petty Officer John K. Gnass, Senior Instructor Course Supervisor, Instructor School, Fleet Training Center, Norfolk, Va., "Navy personnel must be at least a career designated petty officer third class with a performance rating in the top 30 percent of the Navy. This indicates high proficiency in his or her career field and above-average leadership and personal responsibility traits.

"Instructor duty can be voluntary or involuntary," Gnass continued. "In both cases, the detailer carefully screens the petty officer's service record before issuing orders to Instructor School."

Once at the school, petty officers learn methods of delivering technical expertise and other military subjects. "In a short period of time, we teach them the methods, media, and techniques required to be effective Navy instructors," Gnass said.

Instructor School courses cover a variety of subjects. Although the curriculum includes preparing lesson plans and learning objectives, establishing testing procedures, and effective use and application of training aids, the majority of the curriculum is devoted to teaching techniques. Students incorporate training aids into their lesson plans, then practice instructing a class. They also learn various methods of motivating pupils.

"I don't teach petty officers about their specialty," Gnass said. "I teach them how to present their fields, their expertise and their knowledge in an effective manner.

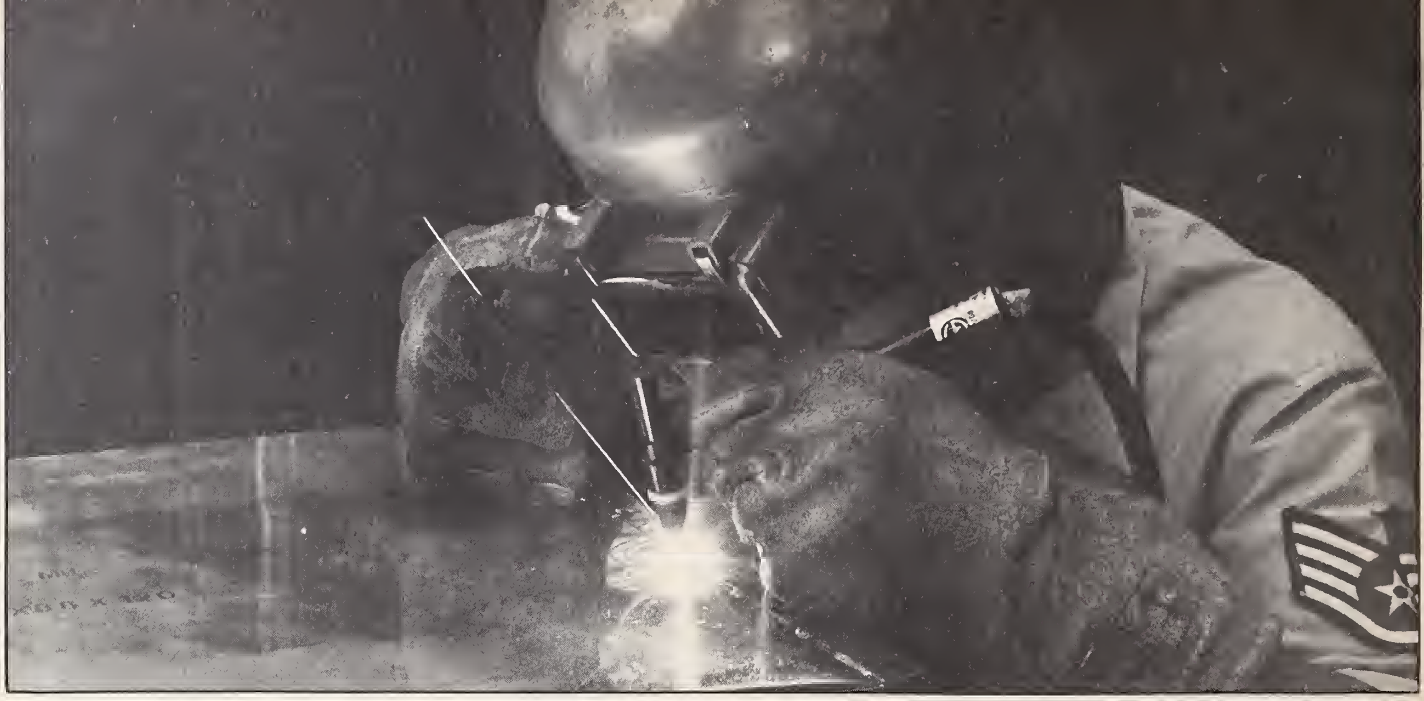
Chief Petty Officer Daniel O'Donnell instructs a class in the operation of an overhead projector.

"However, because Navy instructors learn the correct teaching methods, they can deliver any lesson plan, regardless of the subject," he added.

"Working as an instructor benefits the individual as much as it benefits the Navy," Gnass said. "An instructor fills a vital role in the Navy while developing himself. Most instructors research subjects to the point that they can anticipate students' problems and needs. They prepare answers before the question is asked. Instructors use this same concept when they return to the fleet. They are more effective at giving directions to their people on how to accomplish a task. They are explicit on how they want a job accomplished. Instructor School makes them better leaders.

"Instructors also enhance their chances for advancement," Gnass added. "Promotion boards give high marks for instructor duty. This more than offsets any stagnation from working outside their career field environment.

"As instructors, petty officers fulfill two roles," he concluded. "First and foremost, they are Navy petty officers, they set the example. Secondly, they teach students how to be good sailors. Instructors teach them subjects which are valuable to themselves, the Navy and the nation. They teach sailors their livelihood."



Operation Facelift

story and photos
by Linda Mitchell

Just as airplane structures have expanded from the biplane to the Air Force's workhorse, the C-5 Galaxy, so has the job of repairing their internal and external structural components.

From once carrying only the pilot, aircraft structures now hold thousands of pounds of cargo and more than three hundred passengers and aircrew. Metal and fiberglass have replaced wood and canvas, and passenger comforts have been added. Along with the changes has come the need for more advanced structural repairs.

"We constantly check for corrosion, tears in the plane's outer skin, cracks in the main frame and other exterior and interior defects," said Staff Sgt. Roger Ball, a corrosion control specialist in the 89th Military Airlift Wing Fabrication Branch, Andrews Air Force Base, Md.

"We refer discrepancies to specific shops in the branch for repair," he continued. "Although individuals in each shop carry different Air Force specialty codes, maintenance is a joint effort."

When the airframe shop discovers a crack in the main frame, for instance, corrosion control strips the paint and chemically cleans the area. Nondestructible inspection shop people then measure the crack and determine whether the shop can repair or replace the frame section.

Metals processing personnel use arc-welding and oxyacetylene welding processes. They work with sketches, templates, power shears, cutoff wheels, cutting torches and metalworking hand tools to fashion interior and exterior aircraft sections.

By designing, manufacturing or modifying special precision tools, gauges, dies and jigs, machine shop people facilitate operations. "Airframe personnel mark, cut, drill, bend, and trim sheet metal and install the pieces using riveting techniques," said Staff Sgt. Linda Lerner, an airframe specialist at Andrews.

Corrosion controllers then apply coats of appropriate corrosion-retarding chemicals and paints.

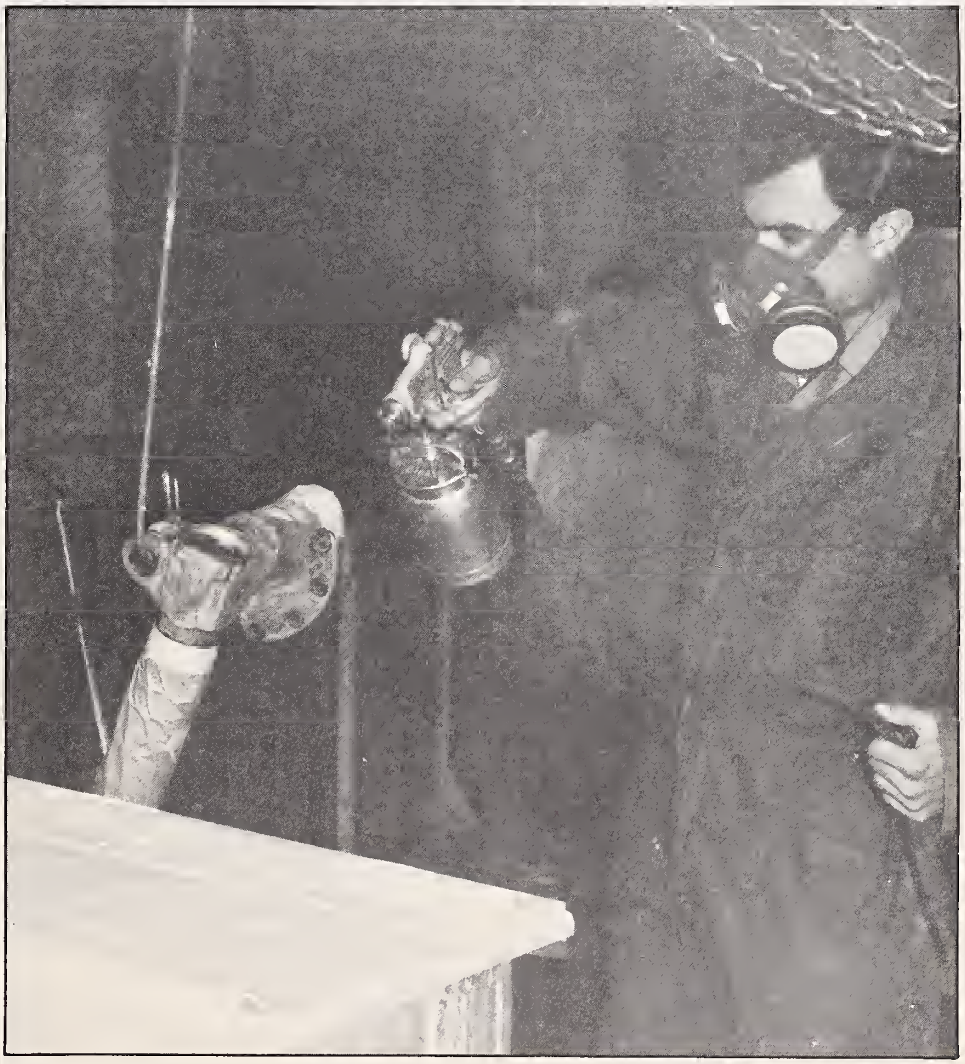
The aircraft's interior is equally a team effort. "Most interior modifications are for the comfort of our special passengers," Lerner said. "The 89th MAW planes carry government officials, including the president, vice president and foreign dignitaries, as well as military members, stateside and aboard."

Modifications include reupholstering seats; constructing galleys and storage areas; making metal water tanks; installing lavatory fixtures and laying carpet. Additionally the shops maintain survival equipment like life rafts, preservers and parachutes.

Early pilots weren't as concerned with creature comforts as they were with keeping the aircraft flying. But today's aircrews and passengers can rest assured that their comfort and safety are uppermost in the minds of structural repair specialists.

LERNER
U.S. AIR FORCE

FIRE EXIT
KEEP CLEAR
FIRE ALARM
FIRE EXIT



Army sergeants

‘Under the Hat’

story by Karen Murdock

The drill sergeant stands in front of the new trainees just arriving for basic training. No one smiles much as thoughts drift to the upcoming haircuts and other challenges to be encountered. The sharp creases in the drill sergeant’s uniform appear capable of drawing blood and the “Smokey the Bear hat” gives the man an even more menacing demeanor.

Most new recruits have heard horror stories about the terrors of basic training and the drill sergeants. “Many recruits are surprised to learn that although we’re strict and can be tough, the policy is to treat them with respect and dignity,” said Sgt. 1st Class Mark Thomas Ratzlaff, senior drill sergeant at the 1st Basic Training Brigade, 5th Battalion, at Fort Jackson, S.C. “The old way of tearing them down, then building them up is obsolete. People respond better when treated like human beings.

“Being a drill sergeant requires dedication. A drill sergeant has to enjoy training people,” Ratzlaff said. “My day usually begins at 3 a.m. when I get up and prepare my uniforms. Reveille sounds for trainees at 4:30 a.m. They have 30 minutes to get up and square away (clean) the barracks, followed by 45 minutes of physical training. We give them 30 minutes to shower and change before going to breakfast from 6:15 to 7:15 a.m. The rest of the day depends on what’s scheduled. Today from 8:30 to 11:30 a.m., we have

A drill sergeant explains M16-A1 rifle maintenance to a soldier during basic training. (U.S. Army photo) drill and ceremony. After lunch, from 1 to 5 p.m., we're giving instructions on how to set up wall and foot lockers. Dinner will be from 5 to 6 p.m. and from 6 to 9 p.m. is drill sergeant time. This is when we counsel trainees, complete paper work and perform reinforcement training, which is additional instruction for trainees having problems in specific areas," Ratzlaff explained.

"The days seem awfully long because we spend so much time on our feet. After the first few cycles, it gets frustrating seeing recruits repeat the same mistakes. A drill sergeant has to pay attention to detail and refrain from getting 'sloppy,'" he said. "Drill duty can be tough on family life too. We work six days a week for eight weeks. Depending on the schedule, we can get a couple weeks off between cycles or graduate one class on a Friday and pick up a new group the following Monday. In order to combat 'burnout,' drill sergeant duty only lasts two years."

At the present time, the Army has approximately 3,900 men and women "under the hat." About 35 percent of the soldiers who become drill sergeants volunteer for the duty. The rest are "drafted" from every military specialty in the Army.

Candidates at drill sergeant school master the basics of basic — drill and ceremony; marksmanship; infantry tactics; first aid; survival techniques; and standard weapons including the M-16 rifle, the M-60 machine gun, the M-203 grenade launcher, the light anti-tank weapon and the Claymore mine.

"The school wasn't as bad as I expected. The real problem many of us had was living in the barracks and undergoing daily inspections, just like we did when we were recruits," Ratzlaff said. "I was drafted for the job. I was stationed with the Old Guard at Fort Myers, Va., when I received notification that I was on drill sergeant status. I wasn't happy at first, but when I got to school and made up my mind to do the best I could, I graduated at the top of my class."

Both men and women recruits are trained at Fort Jackson. "The Army tested co-ed training but discontinued the program because it created unfair competition between men and women. Now, male and female recruits are trained separately," he explained. "I've trained both men and women. For the drill sergeant, training either group has advantages and disadvantages, but it all equals out in the end. The objectives is to train all new troops well.

"I enjoy working with people. I don't necessarily enjoy the hours, but that's part of the job. At the end of a cycle, it's rewarding to see people who, eight weeks earlier didn't seem to know their left foot from their right, march as one on graduation day," Ratzlaff said. "I feel good knowing I trained these people to be soliders. It makes the long days and frustrations worth it."

Sgt. 1st Class Jeffrey Singer, Fort Leonard Wood, Mo., explains a target grouping to a soldier learning to fire the M16A1 rifle. (U.S. Army photo)

Sgt. 1st Class Harvey Conn, Fort Dix, N.J., assists a soldier on the rifle range during weapons qualification. (U.S. Army photo)

Military Photographers

story by Karen Murdock

Everyone takes pictures. New parents document the baby's every move. Weddings are photographed by friends with instamatics and there are more cameras at a family reunion than at a presidential news conference.

"People don't realize there's a difference between being a photographer and being a picture taker," explained Petty Officer 2nd Class Isaac W. Lawrence, a public affairs specialist at the Coast Guard Reserve Training Center Graphic Arts Laboratory in Yorktown, Va.

"The job isn't as easy as it looks. Anyone can grab a camera and push a button to get a snap shot. But to take photographs, the person behind the camera has to know about angles, lighting, film speed, and how to relax the subject to create a good shot," Lawrence said. "Every job is different and it's a challenge to get the best photograph possible."

Army, Navy, Marine Corps, Air Force and Coast Guard photographers are trained for the challenges encountered on the job. Airmen, soldiers and Marines are instructed at the Still Photography Specialist Course at Lowry Air Force Base, Denver, Colo., while Coast Guard and Navy personnel study at the Navy School of Photography, Naval Technical Training Center, Pensacola, Fla.

> **"People don't realize there is a difference between being a photographer and being a picture taker"**

"At one time, photographers and journalists were separate rates," Lawrence said. "The Coast Guard recently combined them and changed the title to public affairs specialist. We also train at the Defense Information School (DINFOS) at Fort Benjamin Harrison, Ind.

"We handle all aspects of the public affairs field," Lawrence continued. "Here at the training center, we produce training aids for classes, materials for textbooks, promotion photos, and technical photography, as well as studio portraits.

"Our graphic arts lab probably does more color work than any other lab in the Coast Guard. We handle color prints and slides as well as black and white processing and printing. I also produce video tapes and documentaries," Lawrence added.

Navy photojournalist Petty Officer 2nd Class Chris Holmes at the Public Affairs Center, Norfolk Naval Base, Va., writes stories about Navy people for civilian newspapers. "My first assignment was at the Pacific Missile Test Center at Point Magoo, Calif. I shot aerial and high speed motion picture photography.

"In addition to my photography training, I was required to go through the five-week aircrewman candidate school, at Pensacola, Fla., because my 'studio' was the backseat of a jet.

"My next assignment was in Antarctica documenting scientific research. It was like being in the middle of a National Geographic special," Holmes said. "I was then accepted for a resident photojournalism course at Syracuse University, N.Y., where I spent nine months studying advanced photography."

Sgt. Rachel N. Lowery, Headquarters Battalion, B Company, Camp Lejeune, N.C., had a two-year photography degree before joining the Marine Corps. "Although I had a photography degree, I learned quite a bit at the Lowry AFB course. I drew on my background and from the instructors' knowledge and came away with a better understanding of the job.

"As a Marine Corps photographer, I've gotten a variety of experience in every aspect of running a photography laboratory. I consider myself a 'jack-of-all-trades.' I handle ordering supplies, issuing cameras to other photographers, shooting jobs, processing and printing color and black and white film and dealing with photo lab customers," she explained.

Sgt. Darleen Wilson-King, a still photographic specialist at the 1st Combat Support Group, Langley AFB, Va., said, "I always wanted to take up photography; but as a hobby, I considered it to be too expensive. Since joining the Air Force and becoming a photographer, I wouldn't trade it for any other profession.

"Base support is our main mission here. We shoot promotion and award ceremonies, changes of command, and other presentations for base personnel. We also do photos for material deficiency reports — close-up photography of aircraft and equipment damage," Wilson-King explained.

"I was taught the basics in school and learned most of the technical photography on the job. That's another reason I like the job. I'm always learning."

Army Staff Sgt. James R. Daniel is an instructor at the Lowry AFB photography school. "The basic still photographers course is 12 weeks and 4 days. Army photograhers receive an additional 20 days of instruction dealing with situations unique to the Army such as the Cold Regions Test Center at Fort Greely, Alaska. To photograph in the extreme cold temperatures encountered there, a photographer has to learn special techniques.

"We teach photography basics—what film is, how it works, how to operate a camera and its lenses. We give instruction on different cameras, from 35mm to the 4 by 5 inch format studio camera. We also teach black and white and color processing and printing, color slides, portrait and studio work, crime and sports photography and how to photograph action shots," Daniel explained.

"Many of the Army photo labs are now staffed with civilian photographers, but there are numerous positions for military members. For example, the Cold Regions Test Center photo lab is staffed solely by military photographers.

"It's an interesting job, no matter what service the photographer belongs to," Daniel said. "We could photograph a promotion ceremony in the morning, work with the military police on an accident investigation in the afternoon and then shoot a sports event at night. There's always something different. We don't get bored. The job's best aspect is we're always learning new techniques and photography skills. We're always improving ourselves."

Second Sight Defense

story and photos
by Linda L. Mitchell

The hive hums with the sound of bumblebees flitting busily from one activity to another. But it's not likely anyone would be stung by these bees, unless they are an enemy aircraft stirring up the nest.

This hive is a large hangar at Marine Corps Air Station, Cherry Point, N.C. The bees are AV-8B Harriers and human members of Marine Attack Squadron (VMA-331).

Nicknamed the Bumblebees, maintenance, aircrew and support personnel keep the Harriers flying. Their ability to respond immediately to threats against the United States is of primary importance.

Part of that response capability includes the ability to communicate with each other, fly where they're supposed to, and use the weapons the Harriers carry when necessary.

"The job includes removing and replacing inoperative communications, navigational, weapons, electronic and photographic equipment," said Lance Cpl. Scott A. Stroud, a weapons system avionics technician in VMA-331. "Only minor repairs are done in the squadron shop. Major repairs are performed at rework facilities."

Maintenance ranges from simply changing tapes in video cassette recorders to removing and replacing dome mode trackers (DMT).

"The dome mode tracker is a device which allows the pilot to view the action outside the cockpit without turning his head or completely removing his eyes from the aircraft's controls," Stroud said. "The DMT's small television camera located in front of the pilot at eye level, swivels 180 degrees in all directions, recording air-to-air and air-to-ground maneuvers. The images it records are displayed on a heads-up display (HUD) screen located to the left of the pilot's head.

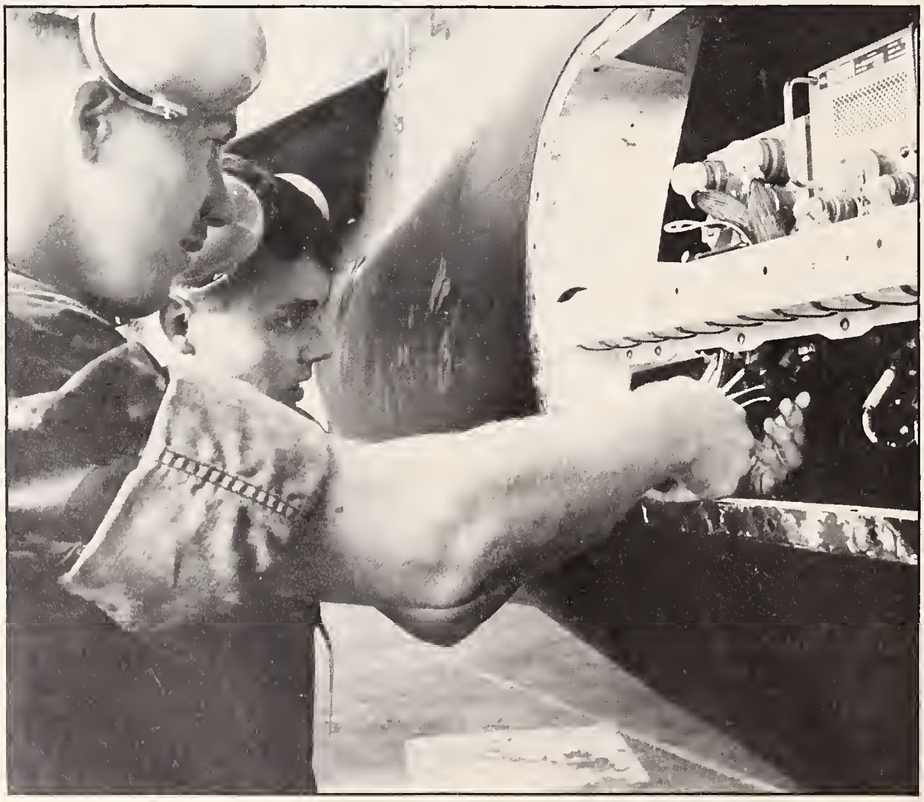
"Simultaneously, a readout appears on the DMT digital data indicator screen," Stroud continued. "The picture and the digital readout tell the pilot where he is in relation to enemy aircraft and ground targets. They indicate wind speeds, tachometer readings and direction headings, all of which must be considered by the pilot when attacking an aerial or ground target," he explained.

"Using the DMT as a second pair of eyes, the pilot also aims and launches laser-guided missiles," Stroud added.

Two other devices avionics technicians maintain help Harrier crews react swiftly to airborne threats. "The radar warning system picks up on the enemy's radar signal, indicating how close the enemy is and the type of weapons he's carrying.

"Additionally, Harriers carry a defensive electronic countermeasures (DECM) pod," said Lance Cpl. Scott A. Clark, a communications/navigation avionics technician. "The pod throws off the enemy's radar by sending the attacker false signals as to the Harrier's exact location.

While the dome mode tracker, radar warning system and DECM pod are hard at work, a video recorder captures all the action on two, one-hour cassette tapes. "Unlike the procedure in older aircraft, where photographers are required to photograph missions and then develop the film in time for mission debriefings, the VCR



Lance Cpls. Vernon L. Hasty, left, and Scott A. Clark check one of an AV-8B Harrier's avionics systems.

records the process instantly," said Lance Cpl. Vernon L. Hasty, an avionics photographic equipment technician.

"One cassette records the information for the debriefings. The pilot can see immediately how well he did or what mistakes were made during practice bombing runs or flying exercises by replaying the second tape on the HUD screen while returning to base," he explained.

"Maintenance on the VCR is probably our simplest job," Hasty continued. "We check transmission lines, remove and replace the 7-inch-square VCR box, and install the tapes."

Avionics technicians work on communications and navigation systems. "Avionics technicians install and test the radios pilots use to communicate among themselves and with ground personnel," said Clark. "They also remove and replace navigational equipment, like the tactical air navigation (TACAN) system. The ultra high frequency electronic tracking system provides the pilot with continuous bearing and distance indications from TACAN stations located at airports in the vicinity of his flight path."

Avionics weapons system technicians test the heads-up display, the dome mode tracker and other weapons system components. Other avionics technicians take care of the aircraft's electrical systems such as starters, generators, fuel systems and flight controls.

"Maintenance on the AV-8B is easier than on the older AV-8A version, thanks to the AV-8B's on-board test system," said Stroud, who has experience on the older model.

"The built-in test (BIT) system internally checks the components by sending a signal to each piece. Each component sends back a signal telling the BIT where there's a problem. The test system then produces a digital readout indicating the malfunction's location. It saves us from removing aircraft panels or disassembling a component completely," Clark said. "It's similiar to the diagnostic machines used by auto mechanics.

"There are two fuses in the new Harrier, and a lot of circuit breakers," he added. "Before, avionics technicians had to run the problem down through a hundred fuses. Now BIT finds the defective fuse or circuit breaker and they change or reset it.

"The process is similar to finding a malfunction in a home stereo system," Clark explained. "Say, for example, the turntable malfunctions. Using deductive reasoning and diagnostic tools, technicians can trace the problem from the needle through the turntable component and wiring without tearing the entire system apart."

The job seems easy, but there's a lot of background training involved. "New recruits are placed in any of several avionics schools at the Marine Aviation Training Support Group 90, Memphis, Tenn., and the photo school at 3rd Marine Air Wing, El Toro, Calif.," Hasty said.

" Everyone attends the aviation fundamentals course and the basic electricity and electronics course. Marines may also attend the aviation electrician school to learn more about the components, or study the camera systems at the photo school. And, there is continuous hands-on training here," Clark added.

The training and equipment with which avionics technicians work turn maintenance hours into minutes. "Avionics technicians appreciate the easy maintenance, but the important fact is that the time an aircraft is nonoperational is decreased," Stroud said. "Because they can do the job faster, pilots can spend more hours in the air, doing what they do best—defending the 'nest' from invaders."

Lance Cpl. Scott A. Stroud tests the operability of an AV-8B Harrier's dome mode tracker.

New York New York!

story and photos
by Karen Murdock

There's a popular song that describes New York as a place where there's a half million things to do at a quarter to three in the morning. But if staying up all night isn't what you had in mind, there's also plenty to do during daylight hours and early evening.

Governors Island, a Coast Guard "oasis" in the middle of the busiest harbor in the world, lies off the southern tip of Manhattan and is served by Coast Guard-operated ferries "around the clock."

Home to approximately, 6,000 Coast Guard members and their families, the island is the world's largest Coast Guard facility and is a self-contained community, offering residents all the amenities found in other small towns. Island residents can reach the city in a minimum amount of time and enter the core of the "Big Apple's" activities by walking, or taking a cab, bus or car.

Whatever the budget or interest, New York offers a year-round variety of activities for residents and visitors. For many people, New York immediately brings the theater to mind. Military people and their families can get many of the tickets for current Broadway plays at discounted prices at the Special Services Office on the island. The USO, located at 45th Street and Broadway in Manhattan, distributes free tickets to Broadway productions to active duty people. However, the tickets are allocated on a daily basis and listings can't be given in advance.

A walk through New York's Chinatown gives visitors a glimpse of oriental life.

New York has also been described as the "melting pot of the world." A visitor can wander through sections of Italy, China, Germany, Puerto Rico and many other countries just by walking New York streets.

It's virtually impossible to list all the sightseeing attractions available in New York. However, the Convention and Visitors Bureau publishes a quarterly calendar of events with up-to-date listings of Broadway plays, historic sites, exhibits, sports attractions, museums and other happenings in the city's five boroughs.

People interested in checking out the scenery on a more lofty level can try the Empire State Building or the World Trade Center. The Empire State Building is 102 stories high with observation decks on the 86th and 102nd floors.

The World Trade Center has an enclosed platform on the 107th floor, the highest open-air observation deck in the United States. Visitors can take the escalator to the open walkway on the roof, a quarter of a mile in the sky. More than 80,000 people visit the twin structures daily.

Even though she's undergoing extensive renovation, the Statue of Liberty is still receiving visitors. A ferry transports people to Liberty Island Wednesdays through Saturdays on an hourly basis.

The Staten Island Ferry from Manhattan provides an excellent view of the world's busiest harbor and the lower Manhattan skyline. Other sites on the five-mile voyage include Governors Island, the Statue of Liberty and Ellis Island, the immigration center from 1892 to 1954. A round trip costs 25 cents.

Folks interested in high finance can take free guided tours of the New York and American Stock Exchanges and the Federal Reserve Bank of New York.

For those with museums in mind, New York has more than 69. Some of the stops include the Museum of American Folk Art, Fire Department, and Police Academy Museums, American Museum of Immigration, Guggenheim Museum, Metropolitan Museum of Art and the Museum of Holography.

Rockefeller Center is another featured attraction. The center is the world's largest-privately owned business and entertainment complex, with 19 buildings covering 22 acres. The buildings are connected by a network of underground concourses lined with shops. A one-hour tour of the entire complex includes a backstage look at Radio City Music Hall.

Times Square, the theatrical center of the city, is surrounded by playhouses, first-run movies, nightclubs, hotels and shops. More entertainment can be found at the Lincoln Center for the Performing Arts with year-round activity in music, drama and dance.

For those interested in getting back to nature, the Bronx Zoo is a good place to start. Officially known as the New York Zoological Park, it's one of the largest in America. Where possible, the animals are shown in their natural habitats.

Many military members and their families prefer to avoid the hustle and bustle of the big city and stay on the island for entertainment. The Governors Island Theater Group presents stage plays throughout the year for island residents. Other activities include bowling, arts and crafts, and a large variety of sporting events, including baseball, volleyball, football and softball. The island also has a picturesque nine-hole golf course.

Because renting a place to live in the city can be extremely expensive, many Coast Guard members live in housing on the island. Other services on the island include a dental clinic and dispensary as well as a base exchange and commissary.

Whether on the island or exploring the city, no one has time to be bored. The city does have something for everyone. The New York motto—"I love New York"—can be seen everywhere. People plaster stickers on cars, taxis, buses and buildings and wear the slogan on T-shirts.

With so many things to do, see, explore and experience, it's easy to understand why residents and visitors alike proclaim their affection at every opportunity. Like the song says, "There's no place that I'd rather be."

The top of the World Trade Center gives a visitor an excellent view of downtown New York.

Maintaining the Communications Flow

story and photos
by James McKane III

In the military, efficient communications can mean the difference between victory and defeat. If communications had been more reliable during World War II, naval commanders may have averted the Pearl Harbor onslaught. Unfortunately, due to poor communications, warning of the air strike arrived after the battle.

Most military positions can be successfully defended against enemy assaults if intelligence sources determine attack is imminent. Field commanders rely on communications technicians to expediently transmit and receive information concerning enemy movement. However, a relay of information can be only as fast as the machine which transmits it. In the Navy, communications technician maintenance (CT(M)) branch personnel keep the fleets' communication gear operating efficiently.

"In combat, rapid communications helps determine who wins and who loses," Petty Officer 2nd Class Mark Mickels, Fleet Electronics Support Shop (FESS), Naval Security Group Detachment, Norfolk, Va., said. "By computerizing communications equipment, the Navy has increased transmission speed. The only problem is repair.

"Although technology has increased the speed of transmission, it's done little to decrease repair time," he continued. "In the past, repairs were simple. CT(M)s used common hand tools to replace tubes or repair circuits. Modern communication equipment requires a communications technician maintenanceman to use both visual inspection and electronic measures to determine which component is malfunctioning."

Communications technician maintenancemen use voltage, amperage and resistance meters to troubleshoot equipment. Once they narrow the problem to a single component, frequency signal generators, oscilloscopes and digital frequency counters identify the bad module or circuit board.

"Because the emphasis is on getting the piece of equipment repaired and returned to the ship as fast as possible," Mickels said, "technicians replace the failed part with one from the shop's inventory. Later, a technician will repair the replaced module or circuit board as time allows.

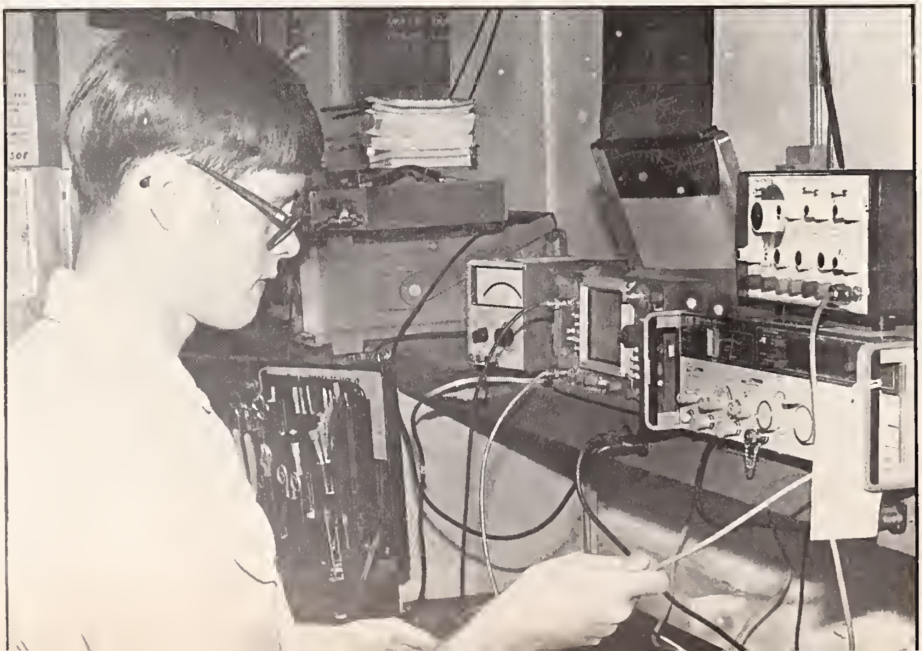
"In many instances technicians forward bad components to a major military or factory repair facility," he continued. "Some of the components are so sophisticated that technicians need microscopes to perform miniature and micro-miniature repair."

Communications technician maintenance branch personnel often spend the first two years of their enlistment in technical training.

"I've attended four schools since graduating from recruit training," said Petty Officer 3rd Class Dwight Barnthouse, also with FESS Norfolk. "The Basic Electricity and Electronics School, Orlando, Fla., and the Electronics Warfare School, Corry Station, Pensacola, Fla. provided the general and advanced electrical and electronics background required to attend the Communications Technician Maintenance (CT(M)) Class 'A' School.

"In 'A' School I learned the mechanics of electronics repair, digital computer repair and micro-computer repair. I also studied radio receiver, recorder, reproducer and transmitter repair procedures. The course ended with instruction on the proper procedures for handling classified material.

"After five weeks of specialized training on classified cryptologic equipment at Lackland Air Force Base, San Antonio, Texas, I reported here," he added.



Petty Officer 3rd Class Dwight Barnthouse performs preventive maintenance on a receiver.

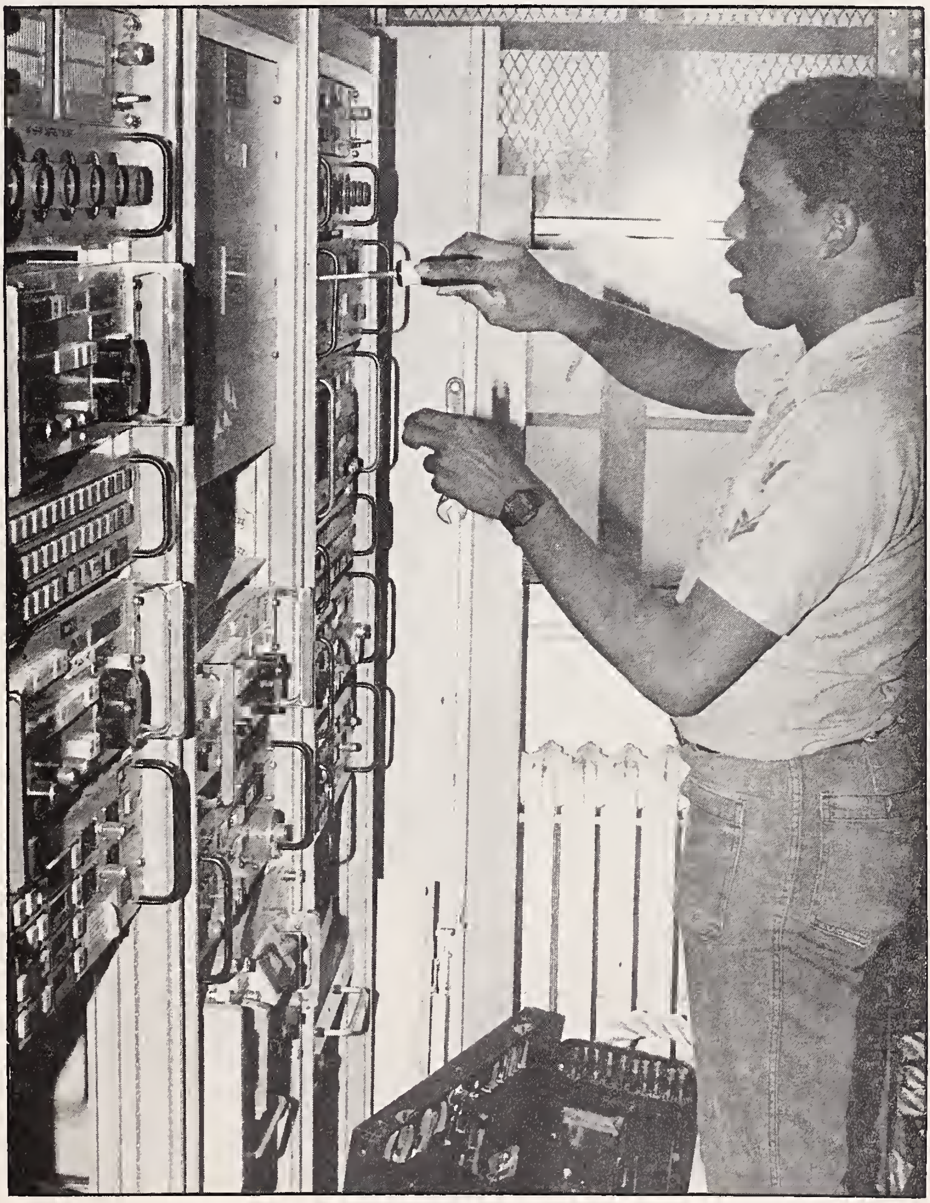
Because most of the equipment communications technicians maintenancemen repair is classified, all CT(M)s possess a security clearance. "Individuals entering the field can't have anything more than minor traffic violations on their police record," Chief Petty Officer Thomas Freye, FESS Norfolk supervisor said. "And once in the field, any minor infraction concerning drug use or alcohol abuse is grounds for automatic loss of clearance, and explusion from the field.

"Pre-service education requirements aren't as stringent as the security clearance requirements. However, a high electronics score on the Armed Services Vocational Aptitude Battery (ASVAB) is required to be guaranteed CT(M)," he added.

"What I like most about the job is I'm always learning," said Petty Officer 2nd Class George Hill. "It seems I'm always in an on-the-job training status trying to keep up with the technological advances in the Navy's communications equipment.

"I recently completed training on the Tactical Intelligence **(TACINTEL)** system," he continued. "TACINTEL is an advanced system which provides extremely rapid and secure communications. Because it uses satellites to relay information between computers, field commanders know what's happening within seconds after an event occurs. The system is designed for use on most Navy ships, so CT(M)s should be going to sea more often and in larger numbers. Personally, I'm looking forward to the travel," he added.

On December 7, 1941 the fleet at Pearl Harbor was battle ready. The commanders never received warning of an air strike until after the battle. Today, systems exist which prevent such communications breakdowns. Communications technicians maintenancemen ensure these systems stay operational.



Top: Petty Officer 1st Class Verne Farley uses a word processor to maintain data on completed maintenance jobs. Above: Petty Officer 2nd Class George Hill makes an operational check on a piece of communications equipment.

☆U.S. GOVERNMENT PRINTING OFFICE: 1986- 625-039:40003

UNIVERSITY OF FLORIDA
3 1262 09683 0681

Structural Repair — Page 12

The truth is found when men are free to pursue it.

Franklin Delano Roosevelt
Address at Temple University,
Philadelphia (February 22, 1936)

BULK RATE
POSTAGE FEES PAID
DEPARTMENT OF THE NAVY
PERMIT NO. G-9

FLARE

DEPARTMENT OF THE NAVY

Department of Defense
High School News Service
Bldg. X-18, Naval Station
Norfolk, Virginia 23511-6698

OFFICIAL BUSINESS
Penalty for Private Use, $300